

CLAIMS

What is claimed is:

1. 4-Cyclopentyl resorcinol monohydrate.
- 5 2. Form I polymorph of 4-cyclopentyl resorcinol monohydrate.
3. A crystalline polymorph of 4-cyclopentyl resorcinol monohydrate that exhibits an X-ray powder diffraction pattern having a characteristic peak expressed in degrees 2θ at approximately 8.1.
- 10 4. A crystalline polymorph of 4-cyclopentyl resorcinol monohydrate that exhibits an X-ray powder diffraction pattern having a characteristic peak expressed in degrees 2θ at approximately 23.8.
- 15 5. A crystalline polymorph of 4-cyclopentyl resorcinol monohydrate that exhibits an X-ray powder diffraction pattern having characteristic peaks expressed in degrees 2θ at approximately 8.1 and 23.8.
6. The crystalline polymorph according to claim 5 that exhibits a characteristic peak expressed in degrees 2θ at approximately 16.2.
- 20 7. The crystalline polymorph according to claim 5 which exhibits at least one peak expressed in degrees 2θ at approximately 20.0 and 25.8.
- 25 8. The crystalline polymorph according to claim 5 which exhibits at least one peak expressed in degrees 2θ at approximately 13.9, 14.3, 18.4, 19.3, 20.0, 21.3, 25.8 or 26.5.
9. The crystalline polymorph of claim 2, which exhibits an X-ray powder diffraction pattern substantially similar to that depicted in Figure I.

10. The crystalline polymorph of claim 2 which exhibits an X-ray powder diffraction pattern substantially similar to that depicted for Lot #'s 2, 3, or 4 in Figure III.

5 11. A crystalline polymorph of 4-cyclopentyl resorcinol monohydrate that exhibits a single crystal X-ray crystallographic analysis at 160 K with crystal unit cell parameters that are equal to the following:

Table I
10 Space Group and Unit Cell Parameters for Form I Polymorph

| | |
|----------------|----------------------------|
| Form | I |
| Crystal system | monoclinic |
| Space group | <i>P</i> 2 ₁ /c |

15 Cell Dimensions

| | |
|------------------------------|------------------------|
| <i>a</i> (Å) | 11.313 ± 0.001 |
| <i>b</i> (Å) | 7.495 ± 0.001 |
| <i>c</i> (Å) | 12.881 ± 0.001 |
| β (°) | 110.00 ± 0.01 |
| Volume(Å ³) | 987 ± 1 |
| Z(Molecules/unit cell) | 4 |
| Density (g/cm ³) | 1.27 g/cm ³ |
| Temperature | 160 K |

20

25

12. A method for lightening skin comprising administering a compound according to claim 1 to a patient in need thereof.

13. A method for reducing pigmentation in skin comprising administering a compound according to claim 1 to a patient in need thereof.

30

14. A pharmaceutical formulation comprising an effective amount of a compound according to claim 1 in admixture with at least one pharmaceutically acceptable carrier.
- 5 15. A process for producing 4-cyclopentyl resorcinol monohydrate comprising contacting 4-cyclopentyl resorcinol with an admixture of a suitable recrystallization solvent and water under conditions suitable to initiate the precipitation of said 4-cyclopentyl resorcinol monohydrate from the admixture and optionally collecting said 4-cyclopentyl resorcinol monohydrate.